

What is Claimed is:

- 1 1. A gas flow controller for gas burners comprising:
2 a main valve being operable by means of a diaphragm that delimits a first gas
3 chamber; and
4 a three-way valve means connected via gas pipes to the first gas chamber, a second
5 gas chamber in the inlet area of the main valve and a third gas chamber in the outlet area of
6 the main valve, the three-way valve means being operated by an actuator and adapted to
7 control gas flow for applying pressure to the diaphragm for actuating the main valve.
- 1 2. A gas flow controller according to claim 1, wherein the three-way valve means is
2 configured and arranged to selectively connect the first gas chamber to either the second
3 gas chamber or the third gas chamber.
- 1 3. A gas flow controller according to claim 1, further comprising:
2 spring means adapted to load the main valve into its closed position.
- 1 4. A gas flow controller according to claim 1, wherein the main valve is arranged to be
2 opened when there is a negative pressure in the first gas chamber vis-à-vis the second gas
3 chamber.
- 1 5. A gas flow controller according to claim 1, wherein the cross-sectional and flow
2 resistance in gas pipes and through the three-way valve means are configured to achieve at
3 least one of: a selected opening and closing speed of the main valve.
- 1 6. A gas flow controller according to claim 1, wherein the cross-sectional and flow
2 resistance in the gas pipes and in the three-way valve means are configured to achieve a
3 modulation of the opening cross section of the main valve.
- 1 7. A gas flow controller according to claim 6, wherein the cross-sectional and flow
2 resistance of the gas pipe that connects the three-way valve means to the second gas

3 chamber and the respective inlet area of the three-way valve means are configured to
4 achieve a selected modulation of the opening cross section of the main valve.

1 8. A gas flow controller according to claim 1, wherein the three-way valve means is a
2 three-way valve.

1 9. A gas flow controller according to claim 1, wherein the three-way valve means
2 includes a combination of two-way valves.

1 10. A gas flow controller comprising:
2 inlet, outlet and auxiliary chambers;
3 a main valve coupled between the inlet and outlet chambers and to a diaphragm
4 separating the inlet chamber from the auxiliary chamber, the main valve being controllable
5 in response to movement of the diaphragm; and
6 a three-way control valve coupled to the inlet, outlet and auxiliary chambers and
7 configured and arranged to control movement of the main valve by controlling differential
8 pressure across the diaphragm.

1 11. The gas flow controller of claim 10, wherein the three-way control valve is adapted
2 to couple the inlet chamber to the auxiliary chamber to reduce a pressure differential across
3 the diaphragm.

1 12. The gas flow controller of claim 10, wherein the three-way control valve is adapted
2 to couple a relatively higher pressure in the inlet chamber to the auxiliary chamber to
3 increase pressure applied by gas in the auxiliary chamber to the diaphragm and close the
4 main valve.

1 13. The gas flow controller of claim 10, wherein the three-way control valve is adapted
2 to close a connection between the auxiliary chamber and the inlet chamber to create a

3 pressure differential between the inlet chamber and the auxiliary chamber such that gas
4 pressure on the diaphragm from the inlet chamber opens the main valve.

1 14. The gas flow controller of claim 10, wherein the three-way control valve is adapted
2 to selectively couple the inlet chamber to the outlet and auxiliary chambers.

1 15. The gas flow controller of claim 14, wherein the three-way control valve is adapted
2 to couple the inlet chamber to the auxiliary chamber to close the main valve and to couple
3 the inlet chamber to the outlet chamber to open the main valve.

1 16. A gas burner supply valve comprising:
2 first, second and third gas chambers, the first and second gas chambers being
3 separated by a diaphragm, the first and third gas chambers being separated by a main valve
4 coupled to the diaphragm, the main valve being configured and arranged for actuating in
5 response to movement of the diaphragm caused by a differential pressure across the
6 diaphragm; and
7 a three-way servo valve connected via gas pipes to the first, second and third gas
8 chambers and configured and arranged for controlling the differential pressure across the
9 diaphragm to control the actuation of the main valve by selectively coupling the first,
10 second and third gas chambers.